

may yet prove in the œconomy of human life. The man, therefore, whom a genius and love for natural history has allured into its pursuits, and whose leisure permits his gratification in such researches, if he is not happy enough to be crowned with success, at least deserves it, and merits the thanks of his fellow-creatures for his application and diligence.

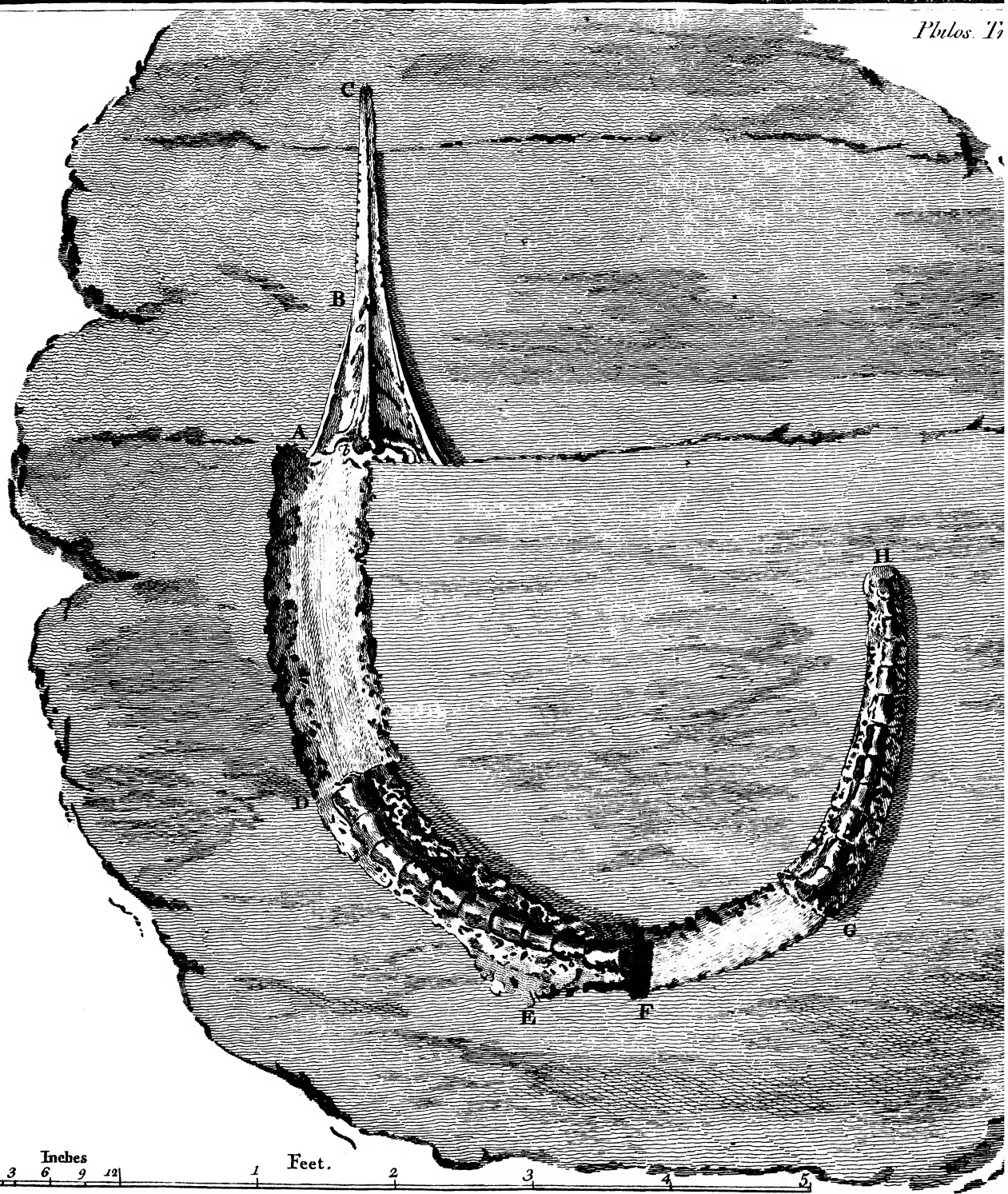
XCII. *An Account of the fossile Bones of an Allegator, found on the Sea-shore, near Whitby in Yorkshire. In a Letter to John Fothergill, M. D. from Capt. William Chapman.*

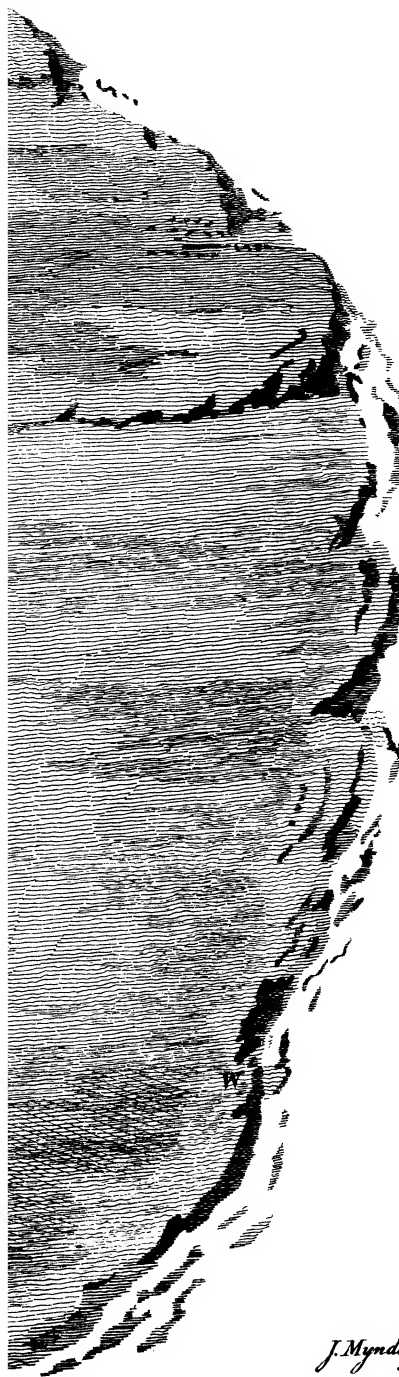
Whitby, 20th of 1st mo. 1758.

Read May. 4,
1758.

A Few days since we discovered on the sea-shore, about half a mile from this place, part of the bones of an animal, appearing as in the annexed figure (*See TAB. XXII.*). The ground they laid in is what we call allum-rock; a kind of black slate, that may be taken up in flakes, and is continually wearing away by the surf of the sea, and the washing of stones, sand, &c. over it every tide.

The bones were covered five or six feet with the water every full sea, and were about nine or ten yards from the cliff, which is nearly perpendicular, and about sixty yards high, and is continually wearing away, by the washing of the sea against it; and, if I may judge by what has happened in my own memory,





memory, it must have extended beyond these bones less than a century ago. There are several regular strata or layers of stone, of some yards thickness, that run along the cliff, nearly parallel to the horizon and to one another. I mention this to obviate an objection, that this animal may have been upon the surface, and in a series of years may have sunk down to where it lay ; which will now appear impossible, at least when the stones, &c. have had their present consistence.

References to the Draught.

A, B, C, the head and bill, not in the same line or range with the rest of the bones.

a, b, A bone, with its processes, which I take to be similar to that, which includes the brain in fishes. The part between the bone and outlines appeared to be a smooth membrane ; but was so thin, that in taking up it broke.

It is evident this is the upper part of the head inverted.

B, C, the superior *maxilla* intire, and in some places covered with the inferior one for four or five inches together. Where this happens, the vacuity is filled with matter like the rock in which it lays ; and there are large teeth in each jaw, at such distances, and so posited, that those in one jaw fill up the vacuities in the other, and appear like one continued row, the mouth being shut.

Where there is only the superior *maxilla* remaining, there are no teeth ; but the sockets

are visible and deep, and at the same distances from each other as the teeth in the other part of the jaw. The tip or extremity of the bill was entire for four or five inches, having both *maxillæ*, with their teeth, and towards the point large fangs. Part of the bill and head were covered with the rock; which was removed before they appeared as in the figure.

A, D, F, G, cavities in the rock, about two inches deep, where, I suppose, the wanting *vertebræ* have laid, as they are exactly suited to have received them.

D, F, Ten *vertebræ*, from three to four half inches in diameter, and about three inches long, some of them separated in taking up. They were about two inches in the rock.

E. Here we observed something like bone to stretch from the *vertebræ*, and intending to take it up whole, begun to cut at what we thought a proper distance; but found we cut thro' a bone; and with the *vertebræ* brought up three or four inches of the *os femoris*, with the ball, covered with the *periosteum*: but the animal has been so crushed hereabouts, that we could make little of the socket or *os innominata*. Several of the ribs came up with the *vertebræ*: they were broke, and laid parallel to the *vertebræ*; but not quite close, there being some of the rock between them. The *periosteum* is visible on many of the bones.

G, H, Twelve *vertebræ* remaining in the rock, with which they are almost covered, especially towards the extremity.

The

The place, where these bones lay, was frequently covered with sea-sand, to the depth of two feet, and seldom quite bare ; which was the occasion of their being rarely seen : but being informed that they had been discovered by some people two or three years ago, we had one of them with us upon the spot, who told us, that when he first saw it, it was intire, and had two short legs on that part of the *vertebræ* wanting towards the head. Altho' we could not suspect the veracity of this person, we thought he was mistaken ; for we had hitherto taken it for a fish. But when we took it up, and found the *os femoris* above-mentioned, we had cause to believe his relation true, and to rank this animal amongst those of the lizard kind : by the length (something more than ten feet) it seems to have been an allegator ; but I shall be glad to have thy opinion about it.

I am thy friend,

William Chapman *Sen.*

*The bones were sent up, and are herewith presented
to the Royal Society by*

J. Fothergill.

